

Figure 1 Continued

Amino acid sequence for LF mature peptide (missing the signal sequence)

```
1 agghgdvgmh vkekeknkde nkrkdeernk tqeehlkeim khivkievkg eeavkkeaae
61 kllkvpsdv lemykaiggk iyivgditk hislealsed kkkikdiygk dallhehyvy
121 akegyepvlv iqssedyven tekalnvyye igkilsrdil skinqpyqkf ldvltikna
181 sdsdgqdlf tnqlkehptd fsvefleqns nevqevfaka fayyiepqhr dvlqlyapea
241 fnymdkfneq einlsleelk dqrmlsryek wekikqhyqh wsdslseegr gllkklqipi
301 epkkddihs lsqeeekellk riqidssdfl steekeflkk lqidirdsls eeekellnri
361 qvdssnplse kekeflkklk ldiqpyding rlqdtggld spsinldvrk qykrdiqnd
421 allhqsigt lynkiylyen minnltatl gadlvdstdn tkinrgifne fknfkysis
481 snymivdine rpaldnerlk wriqlspdtr agylengkli lqrnigleik dvqiikqsek
541 eyiridakvv pkskidtkiq eaqlningew nkalglpkyt klitfnvhnr yasnivesay
601 lilnewknni qsdlikkvt nylvdgngfrv ftditlpnia eqythqdeiy eqvhskglyv
661 pesrsillhg pskgvelrnd segfihefgh avddyagyll dknqsdlvt nskkfifdike
721 egsnltsygr tneaeffaea frlmhstdha erlkvqknap ktfqfindqi kfiins
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Amino acid sequence for LF4 (amino acids 9-252 from above sequence)

```
9 mh vkekeknkde nkrkdeernk tqeehlkeim khivkievkg eeavkkeaae
61 kllkvpsdv lemykaiggk iyivgditk hislealsed kkkikdiygk dallhehyvy
121 akegyepvlv iqssedyven tekalnvyye igkilsrdil skinqpyqkf ldvltikna
181 sdsdgqdlf tnqlkehptd fsvefleqns nevqevfaka fayyiepqhr dvlqlyapea
241 fnymdkfneq ei
```

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Figure 1

LF native DNA sequence

```

1 atgaatataa aaaaagaatt tataaaagta attagtatgt catgtttagt aacagcaatt
61 acttttgagt gtcccgctct tatccccctt gtacaggggg cgggcgggtca tggatgatga
121 ggtatgacac taaaagagaa agagaaaaat aaagatgaga ataagagaaa agatgaagaa
181 cgaaataaaa cacaggaaga gcattttaaag gaaatcatga aacacattgt aaaaatagaa
241 gtaaaagggg aggaagctgt taaaaaaagag gcagcagaaa agctacttga gaaagtacca
301 tctgatgttt tagagatgta taaagcaatt ggaggaaaaga tatatatattgt ggatgggtgat
361 attacaaaac atatatcttt agaagcatta tctgaagata agaaaaaaat aaaagacatt
421 tatgggaaag atgctttatt acatgaacat tatgtatatg caaaagaagg atatgaacc
481 gtacttgtaa tccaatcttc ggaagattat gtagaaaata ctgaaaaggc actgaacgtt
541 tattatgaaa taggtaagat attatcaagg gatattttta gtaaaattaa tcaaccatat
601 cagaaatttt tagatgtatt aaataccatt aaaaatgcat ctgattcaga tggacaagat
661 cttttattta ctaatcagct taaggaacat cccacagact tttctgtaga attcttgga
721 caaaatagca atgaggtaca agaagtattt gcgaaagctt ttgcatatta tatcgagcca
781 cagcatcgtg atgttttaca gctttatgca ccggaagctt ttaattacat ggataaattt
841 aacgaacaag aaataaatct atccttgga gaacttaaag atcaacggat gctgtcaaga
901 tatgaaaaat gggaaaagat aaaacagcac tatcaacact ggagcgattc tttatctgaa
961 gaaggaagag gactttttaa aaagtgcag attcctattg agccaaagaa agatgacata
1021 attcattctt tatctcaaga agaaaaagag cttctaaaaa gaatacaaat tgatagtagt
1081 gattttttat ctactgagga aaaagagttt ttaaaaaagc taaaaattga tattcgtgat
1141 tctttatctg aagaagaaaa agagctttta aatagaatac aggtggatag tagtaatcct
1201 ttatctgaaa aagaaaaaga gtttttaaaa aagctgaaac ttgatattca accatatgat
1261 attaatcaaa ggttgcaaga tacaggaggg ttaattgata gtccgtcaat taatcttgat
1321 gtaagaaagc agtataaaag ggatattcaa aatattgatg ctttattaca tcaatccatt
1381 ggaagtacct tgtacaataa aatttatttg tatgaaaata tgaatatcaa taaccttaca
1441 gcaaccctag gtgcggattt agttgattcc actgataata ctaaaattaa tagagggtatt
1501 ttcaatgaat tcaaaaaaaa tttcaaatat agtatttcta gtaactatat gattggtgat
1561 ataaatgaaa ggcttgcatt agataatgag cgtttgaaat ggagaatcca attatcacca
1621 gatactcgag caggatattt agaaaatgga aagcttatat taaaaagaaa catcgggtctg
1681 gaaataaagg atgtacaaat aattaagcaa tccgaaaaag aatatataag gattgatgag
1741 aaagtagtgc caaagagtaa aatagataca aaaattcaag aagcacagtt aaatataaat
1801 caggaatgga ataaagcatt agggttacca aaatatacaa agcttattac attcaacgtg
1861 cataatagat atgcatccaa tattgtagaa agtgcttatt taatattgaa tgaatggaaa
1921 aataatattc aaagtgatct tataaaaaag gtaacaaatt acttagttga tggtaatgga
1981 agatttggtt ttaccgatat tactctccct aatatagctg aacaatatac acatcaagat
2041 gagatatatg agcaagttca ttcaaaaggg ttatatgttc cagaatcccg ttctatatta
2101 ctccatggac cttcaaaagg tgtagaatta aggaatgata gtgaggggtt tatacacgaa
2161 tttggacatg ctgtggatga ttatgctgga tatctattag ataagaacca atctgattta
2221 gttacaaatt ctaaaaaatt cattgatatt ttaaggaag aaggaggtaa ttaacttcg
2281 tatgggagaa caaatgaagc ggaatttttt gcagaagcct ttaggttaat gcattctacg
2341 gaccatgctg aacgttttaa agttcaaaaa aatgctccga aaactttcca atttattaac
2401 gatcagatta agttcattat taactcataa

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Coding sequence: 1-2430

Signal peptide: 1-99

Mature peptide: 100-2430

LF4 peptide: 124-855

Figure 2

PA native DNA sequence

ORIGIN

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1 atgaaaaaac gaaaagtgtt aataccatta atggcattgt ctacgatatt agtttcaagc
61 acaggtaatt tagagggtgat tcaggcagaa gttaaacagg agaaccggtt attaaatgaa
121 tcagaatcaa gttcccaggg gttactagga tactatttta gtgatttgaa ttttcaagca
181 cccatggtgg ttacctcttc tactacaggg gatttatcta ttccatagtc tgagttagaa
241 aatattccat cggaaaacca atattttcaa tctgctatct ggtcaggatt tatcaaagtt
301 aagaagagtg atgaatatac atttgctact tccgctgata atcatgtaac aatgtgggta
361 gatgaccaag aagtgattaa taaagcttct aattctaaca aaatcagatt agaaaaagga
421 agatttatatc aaataaaaat tcaatatcaa cgagaaaatc ctactgaaaa aggattggat
481 ttcaagttgt actggaccga ttctcaaaat aaaaaagaag tgatttctag tgataactta
541 caattgccag aattaaaaca aaaatcttcg aactcaagaa aaaagcgaag tacaagtgct
601 ggacctacgg ttccagaccg tgacaatgat ggaatccctg attcattaga ggtagaagga
661 tatacggttg atgtcaaaaa taaaagaact tttctttcac catggatttc taatattcat
721 gaaaagaaag gattaaccaa atataaatca tctcctgaaa aatggagcac ggcttctgat
781 ccgtacagtg atttcgaaaa ggttacagga cggattgata agaatgtatc accagaggca
841 agacaccccc ttgtggcagc ttatccgatt gtacatgtag atatggagaa tattattctc
901 tcaaaaaatg aggatcaatc cacacagaat actgatagtg aaacgagaac aataagtaaa
961 aatacttcta caagtaggac acatactagt gaagtacatg gaaatgcaga agtgcattcg
1021 tcgttctttg atattgggtg gagtgtatct gcaggattta gtaattcgaa ttcaagtacg
1081 gtcgcaattg atcattcact atctctagca ggggaaagaa cttgggctga aacaatgggt
1141 ttaaataccg ctgatacagc aagattaaat gccaatatta gatatgtaaa tactgggacg
1201 gtcaccaatc acaacgtgtt accaacgact tcgttagtgt taggaaaaaa tcaaacactc
1261 gcgacaatta aagctaagga aaaccaatta agtcaaatac ttgcacctaa taattattat
1321 ccttctaaaa acttggcgcc aatcgcataa aatgcacaag acgatttcag ttctactcca
1381 attacaatga attacaatca atttcttgag ttagaaaaaa cgaaacaatt aagattagat
1441 acggatcaag tatatgggag tatagcaaca tacaattttg aaaatggaag agtgagggtg
1501 gatacaggct cgaactggag tgaagtgtta ccgcaaattc aagaaacaac tgcacgtatc
1561 atttttaatg gaaaagattt aaatctggta gaaaggcgga tagcggcggt taatcctagt
1621 gatccattag aaacgactaa accggatatg acattaaaag aagcccttaa aatagcattt
1681 ggatttaacg aaccgaatgg aaacttacia tatcaaggga aagacataac cgaatttgat
1741 tttaatttcg atcaacaaac atctcaaaat atcaagaatc agttagcgga attaaacgca
1801 actaacatat atactgtatt agataaaaatc aaattaaatg caaaaatgaa tattttaata
1861 agagataaac gttttcatta tgatagaaat aacatagcag ttggggcgga tgagtcagta
1921 gttaaggagg ctcatagaga agtaattaat tcgtcaacag agggattatt gttaaataat
1981 gataaggata taagaaaaat attatcaggt tatattgtag aaattgaaga tactgaaggg
2041 cttaaagaag ttataaatga cagatatgat atgttgaata tttctagttt acggcaagat
2101 ggaaaaacat ttatagattt taaaaaatat aatgataaat taccgttata tataagtaat
2161 cccaattata aggtaaatgt atatgctgtt actaaagaaa acactattat taatcctagt
2221 gagaatgggg atactagtac caacgggatc aagaaaattt taatcttttc taaaaaaggc
2281 tatgagatag gataa

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Coding sequence: 1-2295

Signal peptide: 1-87

Mature peptide: 88-2295

pCPA: 610-2295

Figure 2 continued

Amino acid sequence for PA mature peptide (missing the signal sequence)

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1 evkqenrlln esesssggll gyyfsdlnfq apmvvtsstt gdlsipssel enipsenqyf
61 qsaiwsgfik vkksdeytfa tsadnhvtmw vddqevinka snsnnkirlek grlyqikiqy
121 qrenptekgl dfklywtdsq nkkevisssn lqlpelkqks snsrkkrrsts agptvpdrdn
181 dgipdsleve gytvdvknkr tflspwisni hekkgltskyk sspekwwstas dpysdfekvt
241 gridknvspe arhplvaayp ivhvdmenii lsknedqstq ntdsetrtis kntstsrtht
301 sevhgnaevh asffdiggsy sagfsnsnss tvaidhslls agertwaetm glntadtarl
361 naniryvntg tapiynvlpt tslvlgknqt latikakenq lsqilapnny ypsknlapia
421 lnaqddfsst pitmnynqfl elektkqlrl dtdqvygnia tynfengrvr vdtgsnwsev
481 lpqiqettar iifngkdlnl verriaavnp sdplettkpd mtlkealkia fgfnepngnl
541 qyqgkditef dfnfdqqtstq nknqlaeln atniyvtldk iklnakmnil irdkrfhydr
601 nniavgades vvkeahrevi nsstegllln idkdirkils gyiveiedte glkevindry
661 dmlnisslrq dgktfidfkk yndklplyis npnykvnvya vtkentiinp sengdtstng
721 ikkilifskk gyeig

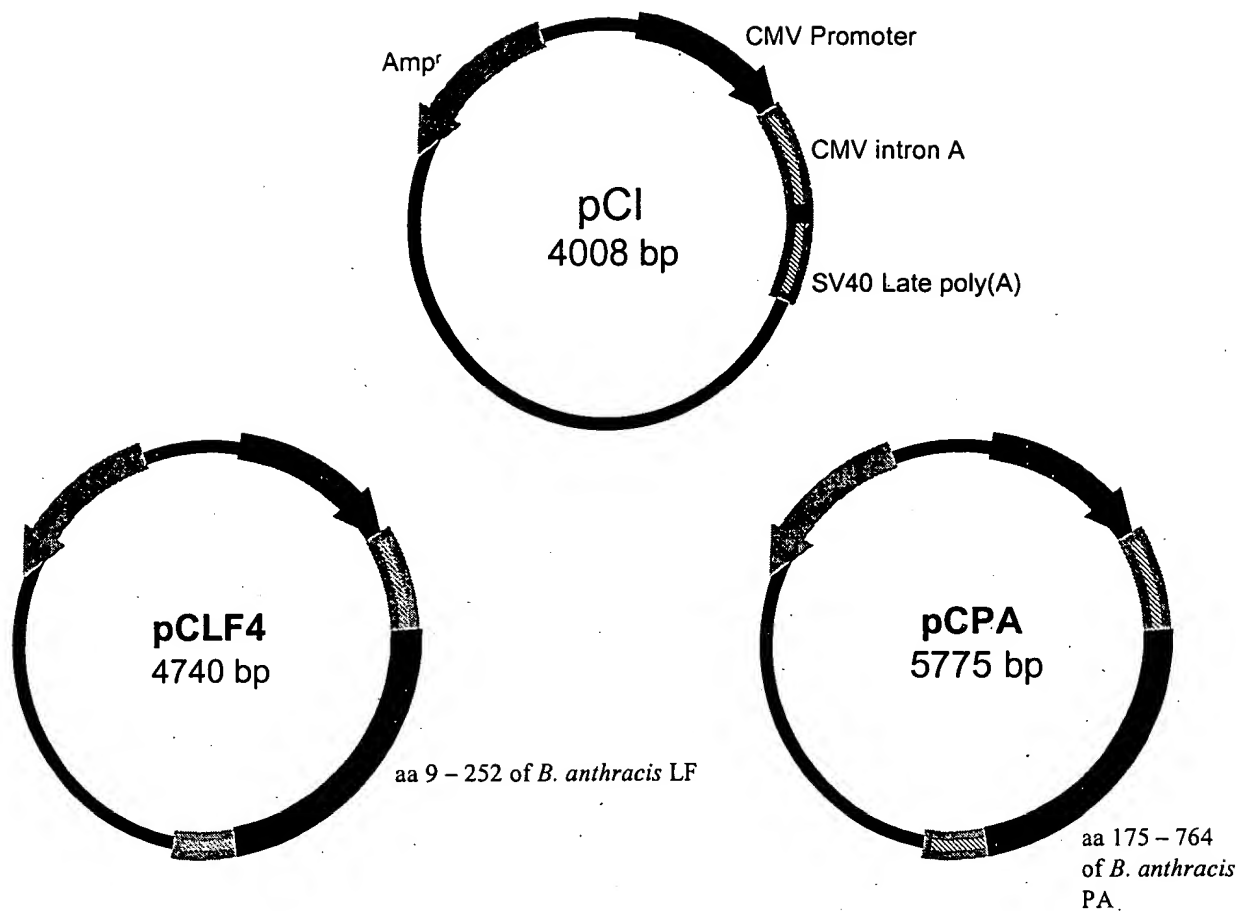
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Amino acid sequence for pCPA (amino acids 175-735 from above sequence)

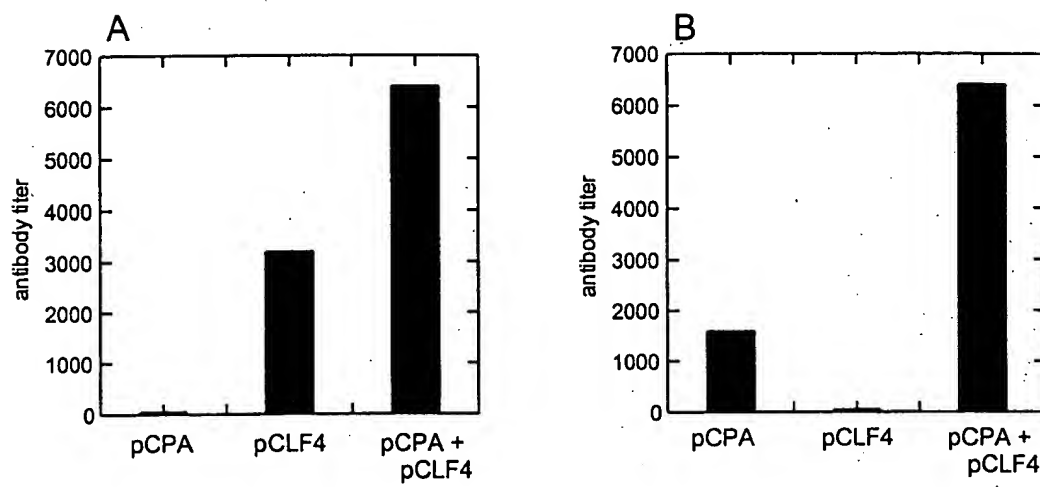
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175 vpdrrdn
181 dgipdsleve gytvdvknkr tflspwisni hekkgltskyk sspekwwstas dpysdfekvt
241 gridknvspe arhplvaayp ivhvdmenii lsknedqstq ntdsetrtis kntstsrtht
301 sevhgnaevh asffdiggsy sagfsnsnss tvaidhslls agertwaetm glntadtarl
361 naniryvntg tapiynvlpt tslvlgknqt latikakenq lsqilapnny ypsknlapia
421 lnaqddfsst pitmnynqfl elektkqlrl dtdqvygnia tynfengrvr vdtgsnwsev
481 lpqiqettar iifngkdlnl verriaavnp sdplettkpd mtlkealkia fgfnepngnl
541 qyqgkditef dfnfdqqtstq nknqlaeln atniyvtldk iklnakmnil irdkrfhydr
601 nniavgades vvkeahrevi nsstegllln idkdirkils gyiveiedte glkevindry
661 dmlnisslrq dgktfidfkk yndklplyis npnykvnvya vtkentiinp sengdtstng
721 ikkilifskk gyeig

```



**Fig. 3**



**Fig. 4**

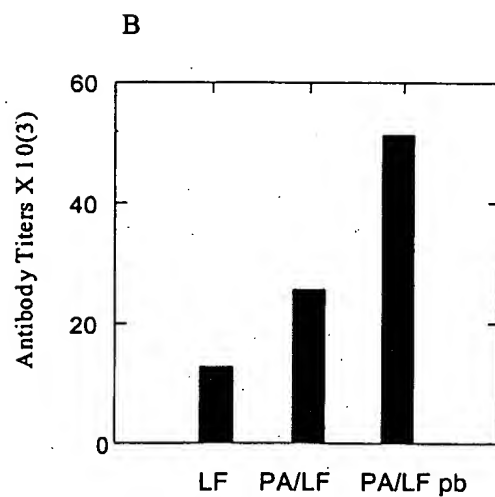
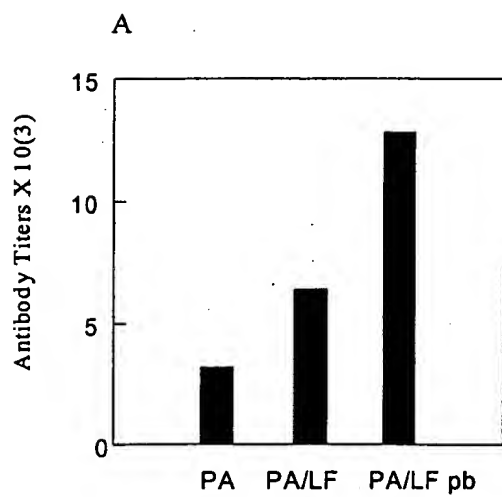
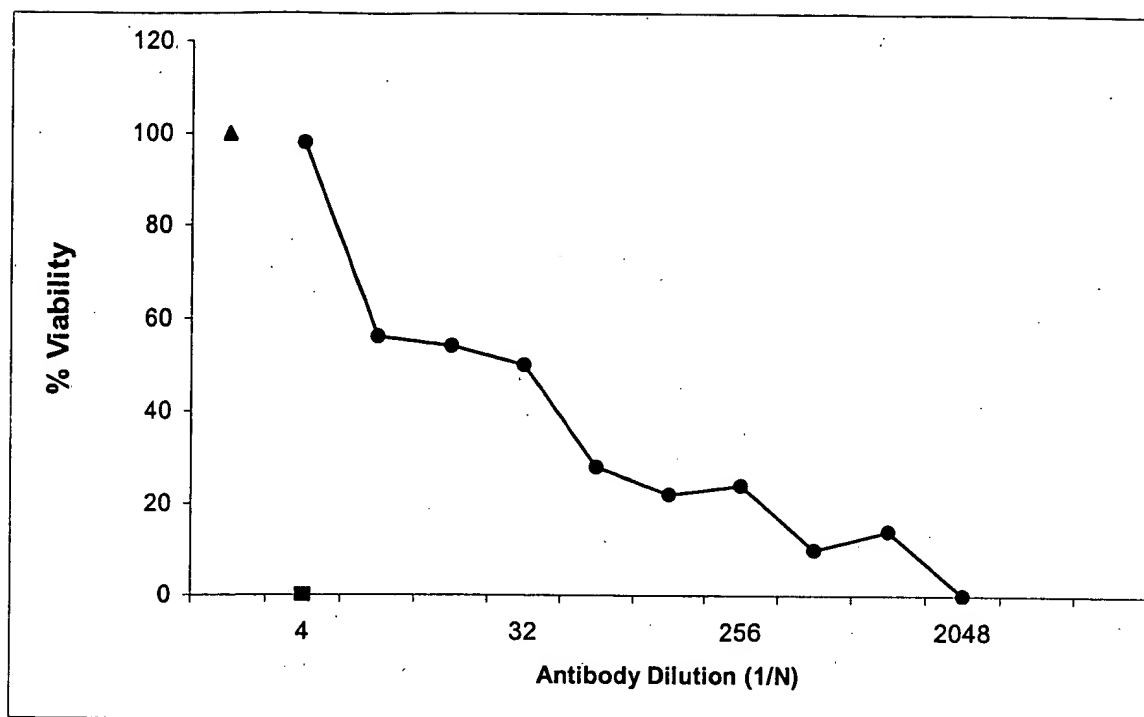


Fig. 5



**Fig. 6**